

Notice of Allowability

Application No.

09/928,966

Applicant(s)

TAKENAKA ET AL.

Examiner

Jose H Alcala

Art Unit

2827

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to election filed on 5/23/03.
2. ☒ The allowed claim(s) is/are 1-15.
3. ☒ The drawings filed on 14 August 2001 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
- * Certified copies not received: _____.
5. ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
 - (a) ☐ The translation of the foreign language provisional application has been received.
6. ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application. **THIS THREE-MONTH PERIOD IS NOT EXTENDABLE**

7. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
8. ☐ CORRECTED DRAWINGS must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No. _____.
 - (b) ☐ including changes required by the proposed drawing correction filed _____, which has been approved by the Examiner.
 - (c) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No. _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet.

9. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|---|
| 1 <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 2 <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3 <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 4 <input type="checkbox"/> Interview Summary (PTO-413), Paper No. _____ |
| 5 <input checked="" type="checkbox"/> Information Disclosure Statements (PTO-1449), Paper No. <u>4</u> . | 6 <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 7 <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit of Biological Material | 8 <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9 <input type="checkbox"/> Other |

Notice of Allowance

Election/Restrictions

1. Applicant's election without traverse of group 1, claims 1-15 and Species 2 in Paper No. 0503 is acknowledged.

EXAMINER'S AMENDMENT

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

The application has been amended as follows:

In the title: Replace title with: --A multi-layer circuit board having at least two or more circuit patterns connected—.

Reasons for allowance

3. The prior art fails to teach, disclose, or suggest, either alone or in combination, at least on claim 1: A multi-layer circuit board, comprising: (a) a double-side circuit board including a first substrate, a plurality of first through conductors disposed in said first substrate, bonding layers disposed on either side of said first substrate, and a first circuit pattern and a second circuit pattern disposed on the surface of said bonding layer, said first circuit pattern and said second circuit pattern being electrically connected to each other by said first through conductors; (b) an intermediate substrate

including a second substrate, a plurality of second through conductors disposed in said second and first bonding layer and a second bonding layer substrate, an a disposed on either side of said second substrate, said first bolding layer and said second bonding layer being disposed on either side of said substrate except said second through conductors, and said intermediate substrate being disposed on the surface of at least one of said first circuit pattern and said second circuit pattern. Therefore, dependent claims 2-15 are allowed.

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following references teach some of the elements of the instant claimed invention: Higgins (US Patent No. 4,967,314), Lee et al. (US Patent No. 5,072,075), Sienski (US Patent No. 5,200,580), Sugawara (US Patent No. 5,219,639), Schreiber et al. (US Patent No. 5,245,135), Bross et al. (US Patent No. 5,259,110), Noddin et al. (US Patent No. 5,279,711), Arai et al. (US Patent No. 5,350,886), Miyazaki et al. (US Patent No. 5,350,886), Mizutani et al. (US Patent No. 5,478,972) and Frankeny et al. (US Patent No. 5,276,955).

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jose H Alcala whose telephone number is (703) 305-9844. The examiner can normally be reached on Monday to Friday.

6. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Talbott can be reached on (703) 305-9883. The fax phone numbers

Application/Control Number: 09/928,966
Art Unit: 2827

Page 4

for the organization where this application or proceeding is assigned are (703) 305-3431 for regular communications and (703) 305-3431 for After Final communications.

7. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

JHA
June 19, 2003



DAVID L. TALBOTT
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800